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SEP 10 2004In re Application of
Yoshikazu Kurita et al

App. No.: 10/065541
Filed: 10/29/2002
Conf. No.: 7669
Title: STARTER FOR ENGINE
Examiner: D. Scheuermann
Art Unit: 2834

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Ernest A. Beutler
Reg. No. 19901

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

APPELLANTS' BRIEFRELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that would have a bearing on or be affected by the decision in this appeal.

REAL PARTY IN INTEREST

In addition to the appellant, the real party in interest is his assignee, Kabushiki Kaisha Moric, a Japanese company.

STATUS OF CLAIMS

Claims 1 through 26 remain in this application but only elected claims 1-4, 6, 9, 11, 12, 23, 25 and 26 are before the Board on appeal. No elected claims have been indicated as allowable.

STATUS OF AMENDMENTS

No amendment was filed after the Final Rejection so all claims before the Board are in the form as Finally Rejected. A clean copy of the claims before the Board appears in the Appendix to this Brief.

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APPELLANT'S INVENTION

At the outset appellants' attorney would like to state that what he will argue to be the invention in this case is the application of a structure, parts of which may be a well known structure for another purpose, to serve and obtain a solution to a problem that also is well known but to which the structure has not been utilized for this new purpose. To try to offer an example to explain the point that appellants' attorney is trying to make, cylindrical elements were well known, but does that mean that the person who first thought of placing them between sliding surfaces to reduce sliding friction did not make an invention? That is similar to the issues before the Board here.

The problem solved by appellants is the fact that in electrical starter motors for effecting the cranking of an internal combustion engine to start it produce undesirable vibrations when the engine has been started and the operation of the starter motor is stopped by discontinuing the supply of electrical power to it. This noise is graphically illustrated in FIG. 1 of the application where starter motor speed and noise are graphed in relation to time. The power source of the starter motor is turned ON at a time t_0 and begins to rotate for cranking. When the engine is started, the starter motor load drops to zero and the rotational speed increases to a maximum. At a time t_1 when this state is reached, the starter switch is turned OFF by either by hand or automatically. As a result, the starter motor rotates idly as a result of its inertia, decreasing its rotational speed gradually and stopping eventually at a time t_2 . Between the times t_1 and t_2 , an abnormally high noise is generated. The noise at this point is an abnormal and unpleasant one and unusually is louder than the engine noise or even that of the starter motor during the actual starting operation.

Appellants have discovered that this abnormal noise is caused by the starter motor yoke of its stator resonating when the natural frequency of the yoke which is similar to the cogging torque of the electric motor. Thus by employing what is admittedly a known structure employed in electrical machines during their powered operation, appellants have been able to solve this vexing problem. Alternatively the phenomenon may be reduced or eliminated by rigidifying the housing of the starter motor.

These methods and the structure for obtaining this solution is fully described under the appropriate heading in the application by reference to the drawings

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ISSUES BEFORE THE BOARD

As discussed above, a main issue to be decided by the Board is if it is patentable to apply a structure, parts of which may be a well known structure for another purpose, to serve and obtain a solution to a problem that also is well known but to which the structure has not been utilized for this new purpose?

More specifically, the Board must determine if the structure of Claims 23, 25 and 26 is anticipated by US Patent 6,252,323 (Nishikawa et al). under 35 USC 102(a).

In addition the Board must determine if the structure of claims 1-4, 6, 9, 11 and 12 is obvious under 35 USC 103(a) from the combined teachings of US Patent 4,862,009 (King) in view of Nishikawa et al.

GROUPING OF CLAIMS

The following claim groupings stand or fall together;

Claims 1 and 2

Claims 4, 9, 11, 23 and 25.

Claims 12 and 26

The patentability of these groups and the remaining claims will be argued separately.

APPELLANT'S ARGUMENTS

There are two independent claims before the Board, these being claims 1 and 23. These two claims both have the common feature of claiming the use of the inventive structure for reducing undesirable conditions after electrical power supply to an electric motor is discontinued. Claim 1 is specific to reducing vibrations in a starter motor at this time while claim 23 claims reducing cogging torque when electrical power delivery is discontinued. In both the rejections of claims 1 and 23, the Examiner relies on the Nishikawa et al reference which teaches reducing cogging torque during electrical power operation, not after it ceases. Thus and as argued already in the description of the invention the Board must at the outset determine if it is patentable to apply a structure, parts of which may be well known for another purpose, to serve and obtain a solution to a problem that also is well known but to which the structure has not been utilized for this new purpose. It is believed that this issue should be resolved in appellants' favor for the same reason a roller bearing would have been patentable if at the time the first cave man used a log to assist in moving a heavy rock by placing it under the rock there had been a patent system.

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Contrary to the Examiner's argument that "One of ordinary skill in the art would have been motivated to do this to reduce the cogging torque of the motor", this is not what appellants have done. They have done this to reduce the cogging effect after the application of electrical power is stopped. Not the same result, but admittedly the same structure.

Claims 1 and 23 do not stand or fall together for a reason that should become apparent when the patentability of that claim is separately discussed later in this brief.

Claim 1 calls for the reduction of vibrations by either of two structures one of which is the cogging method. Claim 2 stands or falls with claim 1 inasmuch as it is specific to the cogging feature, but not with claim 23.

Claim 3 depends on claim 2 and calls for the cogging reduction after power cessation to be accomplished by skewing the relation between the pole core facing ends and the permanent magnet sections. Nishikawa shows a number of embodiments that utilize sets of permanent magnets that are offset circumferentially at an angle to each other. However this is not the same as the structure employed by appellants. They obtain this "skewing" or overlapping the adjacent edges of the magnets. These are not the same things. The Board is respectfully requested to view the figures of appellants application with those of Nishikawa et al. the edges of his magnets are staggered not overlapping. The pole teeth will never be at a position where their edges overlap edges of two adjacent magnet segments as clearly seen in all of the figures of this reference.

Claim 4 depends on claim 3 and specifically calls for the edges of the magnets to be skewed relative to the axis of rotation, a feature not even discussed by the Examiner because it is not shown in the reference.

Claim 6 depends on claim 4 and further calls for the magnets to be magnetized in the direction of the axis of rotation. This is also a feature not even discussed by the Examiner because it is not shown in the reference.

Claim 9 stands or falls with claim 4 upon which it depends as does claim 11 which depends on claim 9.

Claim 12 depends on claim 11 but does not stand or fall with it because it recites an added distinction over the art and specifically what is shown in Nishikawa et al. This is specific to the embodiment of FIG. 10 and requires at least 5 sets of magnets, something clearly not shown in Nishikawa et al and again not discussed by the Examiner.

Claim 23 is, as has been discussed before, another independent claim but stands or falls with claim 9 because it recites the same features claimed therein.

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Claim 25 depends on claim 23 and recites the same features as claim 11 and thus stands or falls with it.

Claim 26 depends on claim 23 and recites the same features as claim 12 and thus stands or falls with it.

For the reasons set out, it is most respectfully submitted that the Examiner has not made out a prima facie case to support any of his rejections and a complete reversal of them is requested.

Respectfully submitted:



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